

Docket: 3816.10
April 7, 2005 (1:46pm)

Amendments to the Claims

1. (Original) A method of joining two silicon parts, comprising plasma spraying silicon across a seam separating said two silicon parts to form a coating on adjacent surface areas of said two silicon parts.

2. (Original) The method of Claim 1, wherein the parts are subjected to atmospheric pressure during said plasma spraying.

3. (Original) The method of Claim 1, wherein portions of the parts adjacent the seam are held at a temperature of no more than 500°C.

4. (Original) The method of Claim 3, wherein said temperature is no more than 200°C.

5. (Original) The method of Claim 1, wherein said plasma spraying includes injecting silicon powder into a plasma of a gas.

6. (Original) The method of Claim 5, wherein said powder comprises particles having diameters in a range of 15 to 45µm.

7. (Original) The method of Claim 5, wherein said powder comprises particles of virgin polysilicon.

8. (Original) The method of Claim 1, wherein principal surfaces of said two parts are perpendicular to each other at said seam.

Docket: 3816.10
April 7, 2005 (1:46pm)

9. (Original) The method of Claim 8, wherein a bevel is formed in at least one of said parts adjacent to said seam.

10. (Original) The method of Claim 9, wherein another of said parts does not have a bevel adjacent to said seam.

11. (Original) The method of Claim 1, wherein a bevel is formed in at least one of said parts adjacent to said seam.

12. (Original) The method of Claim 1, wherein a hole passes through a first one of said parts and said second one of said parts is disposed within hole and wherein said plasma spraying forms respective silicon layers contacting said first and second parts on opposite ends of said hole.

13 -16. (Canceled)

17. (Previously presented) A silicon structure, comprising:
a first silicon part;
a second silicon part disposed adjacent to said first silicon part along a seam; and
a layer of silicon bonded to both of said first and second silicon parts and bridging and overlying said seam, wherein said layer of silicon comprises a layer of plasma sprayed silicon.

18. (Previously presented) The silicon structure of Claim 17, wherein said each of said first and second parts comprises silicon selected from the group consisting of virgin polysilicon, Czochralski monocrystalline silicon, Czochralski polysilicon, and cast polysilicon.

19. (Currently amended) The silicon structure of Claim ~~[[16]]~~ 17, wherein principal surfaces of said first and second silicon parts extend perpendicularly to each other at said seam.

Docket: 3816.10
April 7, 2005 (1:46pm)

20. (Canceled)

21. (Previously amended) A silicon substrate support fixture, comprising:
first and second silicon bases each having mortise holes formed therein;
a plurality of legs comprising silicon members, having teeth cut therein for supporting a plurality of substrates in parallel relationship, and inserted into said mortise holes to form respective seams between respective pairs of said bases and said legs; and
layers of silicon bonded to said bases and legs across respective ones of said seams to join said legs to said bases, wherein said layers of silicon comprise layers of plasma sprayed silicon.

22. (Original) The fixture of Claim 21, wherein each of said bases comprises silicon selected from the group consisting of virgin polysilicon, Czochralski monocrystalline silicon, Czochralski polysilicon, and cast polysilicon.

23. (Original) The fixture of Claim 20, wherein said mortise holes pass through said bases and said layers of silicon are disposed on both sides of said bases for each of said mortise holes.

24 – 26. (Canceled)

27. (Previously presented) A method of joining the parts of a silicon substrate support fixture comprising (a) first and second silicon bases each having mortise holes formed therein and (b) a plurality of legs comprising silicon, having teeth cut therein for supporting a plurality of substrates in parallel relationship, and inserted into said mortise holes to form respective seams between respective pairs of said bases and said legs, said method comprising the step of plasma spraying silicon across said seams to form layers of silicon bonded to said legs and bases across said seams.

Docket: 3816.10
April 7, 2005 (1:46pm)

28. (Previously presented) The method of Claim 27, performed in atmospheric pressure.
29. (Previously presented) The method of Claim 27, wherein portions of the parts adjacent the seams during said plasma spraying are held at a temperature of no more than 500°C.
30. (Previously presented) The silicon structure of Claim 17, further comprising an adhesive bonding together said first and second silicon parts in an area of said seam.
31. (Previously presented) The fixture of Claim 21, further comprising an adhesive bonding together said bases and legs in areas of said seams.